Claims

1. (Original) A method to prepare at least part of at least one surface of a substrate comprising; depositing on said surface at least one plasma monomer wherein during deposition of said monomer, means are provided which move the monomer source across a surface to be treated to manufacture a non-uniform plasma polymer surface.

2. (Original) A method as claimed in claim 1 wherein said means moves said substrate relative to said monomer source.

3. (Original) A method as claimed in claim 1 wherein said means moves said monomer source relative to said substrate.

4. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 3]] wherein the surface comprises at least one plasma polymer of at least one monomer wherein the concentration of said plasma polymer is non-uniform across said surface, or part thereof.

5. (Currently amended) A method as claimed in ~~any preceding~~ claim 1 wherein there is provided a surface comprising two or more plasma polymers formed from at least two monomers.

6. (Currently amended) A method as claimed in ~~any of claims~~ claim 5 wherein the concentration of at least one plasma polymer is non-uniform across said surface, or part thereof.

7. (Currently amended) A method as claimed in ~~any preceding~~ claim 1 wherein the monomer is a volatile alcohol.

8. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein said monomer is a volatile acid.

9. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein the monomer is a volatile amine.

10. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein the monomer is a volatile hydrocarbon.

11. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein the monomer is a volatile fluorocarbon.

12. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein the monomer is an ethyleneoxide-type molecule.

13. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein the monomer is a volatile siloxane.

14. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 6]] wherein said monomer is at least one selected from the group consisting of: allyl alcohol, acrylic acid, octa-1,7,-diene, allyl amine, perfluorohexane, tetraethyleneglycol monoallyl ether or hexamethyldisiloxane (HMDSO).

15. (Currently amended) A method as claimed in ~~any of claims~~ claim 4 [[to 14]] wherein said polymer consists of a single monomer.

16. (Original) A method as claimed in claim 15 wherein said monomer consists essentially of an ethylenically unsaturated organic compound.

17. (Original) A method as claimed in claim 16 wherein the monomer consists essentially of a single ethylenically unsaturated organic compound.

18. (Original) A method as claimed in claim 17 wherein the monomer consists of an ethylene oxide type molecule.

19. (Currently amended) A method as claimed in claim 16 [[or 17]] wherein the compound is an alkene, a carboxylic acid, an alcohol or an amine.

20. (Original) A method as claimed in claim 15 wherein the monomer consists of a mixture of two or more ethylenically unsaturated organic compounds.

21. (Original) A method as claimed in claim 20 wherein the compounds are selected form the group consisting of: an alkene, a carboxylic acid, an alcohol, or an amine.

22. (Original) A method as claimed in claim 15 wherein the monomer consists essentially of a saturated organic compound.

23. (Original) A method as claimed in claim 15 wherein the monomer consists essentially of an aromatic compound or a heterocyclic compound.

24. (Currently amended) A method as claimed in ~~any preceding~~ claim 1 wherein the monomer has a vapour pressure of at least $6.6x10^{-2}$ mbar.

25. (Currently amended) A method as claimed in ~~any of claims~~ claim 4 [[to 14]] wherein the polymer is a co-polymer.

26. (Original) A method as claimed in claim 25 wherein the co-polymer comprises at least one organic monomer with at least one hydrocarbon.

27. (Original) A method as claimed in claim 26 wherein the hydrocarbon is an alkene.

28. (Currently amended) A method as claimed in ~~any preceding~~ claim 1 wherein the monomer (s) is/are deposited on said surface in spatially separated dots.

29. (Currently amended) A method as claimed in ~~any of claims~~ claim 1 [[to 27]] wherein the monomer (s) is are deposited on said surface in tracks or lines.

30. (Currently amended) A method as claimed in claim 28 [[or 29]] wherein the dots and/or lines are of different polymer chemistry.

31. (Original) A method as claimed in claim 30 wherein the chemical composition of the line, track or dot is non-uniform along its length and in height.

32. (Currently amended) A substrate comprising a surface obtainable by the method claimed in ~~any of claims~~ claim 1 [[to 31]].

33. (Original) A substrate as claimed in claim 32 selected from the group consisting of: glass; plastics (e.g. polyethylene terephthalate, high density polyethylene, low density polyethylene, polyvinyl chloride, polypropylene or polystyrene); nitrocellulose, or nylon, metal, ceramics, quartz, metal films or silicon wafer.

34. (Currently amended) An assay product comprising the substrate of claim 32 [[or 33]].

35. (Original) An assay product as claimed in claim 34 that is a microarray.

36. (Original) An assay product as claimed in claim 35 that is a microtitre plate.

37. (Currently amended) A product for separating cells and/or proteins and/or macromolecules comprising the substrate of claim 32 [[or 33]].

38. (Currently amended) A substrate as claimed in claim 32 [[or 33]] further comprising a microfluidic device, or a part thereof (e.g. valve, switch, guide channel, binding site, pump).

39. (Currently amended) An assay product as claimed in claim 34~~, 35 or 36~~ for use with an array printer.

40. (Currently amended) An assay product as claimed in claim 34~~, 35 or 36~~ for use with an array reader.